

**Julia M. Kreiner**  
Evolutionary Geneticist  
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## Academic Positions

<b>Killam Postdoctoral Research Fellow</b>	2021-2023
<b>Bioinformatics BRC Postdoctoral Fellow</b>	2021-2024
University of British Columbia, Biodiversity Research Institute	
Supervisors: Dr. Loren Rieseberg & Dr. Sarah P. Otto	

## Education

<b>PhD</b>	Ecology & Evolutionary Biology, University of Toronto	2015 - 03/2021
	Title: <i>Population genomics of herbicide resistance and agricultural adaptation</i>	
	Supervisors: Dr. Stephen I. Wright, Dr. John R. Stinchcombe	
	Visiting Researcher, Max Plank Institute for Developmental Biology	2019
	Supervisors: Detlef Weigel, Hernan Burbano	
<b>BSc</b>	Honours Biology, University of Guelph	2011 - 2015
	Honours title: <i>Evolutionary dynamics of unreduced gametes</i>	
	Honours supervisor: Dr. Brian C. Husband	

## Publications

10. **Kreiner JM**, Tranel PJ, Weigel D, Stinchcombe JR, & Wright SI. 2021. The genetic architecture and genomic context of glyphosate resistance. *bioRxiv*, Accepted at *Molecular Ecology*.
9. Martin SL, Parent JS, Laforest M, Page E, **Kreiner JM**, & James J. 2019. Population Genomic Approaches for Weed Science. *Plants*.
8. **Kreiner JM**, Giacomini D, Bemm F, Waithaka B, Regalado J, Lanz C, Hildebrandt J, Sikkema PH, Tranel PJ, Weigel D, Stinchcombe JR, & Wright SI. 2019. Multiple modes of convergent adaptation in the spread of glyphosate-resistant *Amaranthus tuberculatus*. *PNAS*. — Media: [Talking BioTech Podcast] [University of Toronto News]
7. Sobanski J, Giavalisco P, Fischer A, **Kreiner JM**, Walther D, Schttler MA, Pellizzer T, Golczyk H, Obata T, Bock R, Sears BB, & Greiner S. 2019. Chloroplast competition is controlled by lipid biosynthesis in evening primroses. *PNAS*.
6. Kryvokhyzha D, Salcedo A, Eriksson MC, Duan T, Tawari N, Chen J, Guerrina M, **Kreiner JM**, Kent TV, Lagercrantz U, Stinchcombe JR, Glemin S, Wright SI, & Lascoux M. 2019. Parental legacy, demography, and introgression influenced the evolution of the two subgenomes of the tetraploid *Capsella bursa-pastoris* (Brassicaceae). *PLOS Genetics*.
5. **Kreiner JM**, & Wright SI. 2018. (*Perspective*) A less selfish view of genome size evolution in maize. *PLOS Genetics*.

4. **Kreiner JM**, Stinchcombe JR, & Wright SI. 2018. Population genomics of herbicide resistance: adaptation via evolutionary rescue. *Annual Review of Plant Biology*.
3. **Kreiner JM**, Kron P, & Husband BC. 2017. Evolutionary dynamics of unreduced gametes. *Trends in Genetics*.
2. **Kreiner JM**, Kron P, & Husband BC. 2017. Frequency and maintenance of unreduced gametes in natural plant populations: associations with reproductive mode, life history, and genome size. *New Phytologist*.
1. **Kreiner JM**. 2016. (*Digest*) The key to pollen-stigma dimorphisms: Dissecting the functional significance of the heterostylous syndrome. *Evolution*.

### Not peer reviewed

3. **Kreiner JM**, Sandler, G, Stern, AJ, Tranel PJ, Weigel D, Stinchcombe JR, & Wright SI. 2021. Repeated origins, gene flow, and allelic interactions of herbicide resistance mutations in a widespread agricultural weed. bioRxiv (in review, eLife - 05/13).
2. **Kreiner JM**. 2019. Where and how we live - Graduate student housing in Toronto. *The EEB Quarterly*, Volume 3. [link](#).
1. **Kreiner JM**. 2016. TAGC shorts: Evolution on ecological timescales. *Genes to Genomes, GSA Blog*. [link](#)

## Research Scholarships

2021-2024	Bioinformatics Postdoctoral Fellowship, Biodiversity Centre, UBC	\$171,000
2021-2023	Killam Postdoctoral Research Fellowship, University of British Columbia	\$108,000
2020	GM Women in Science and Mathematics Award, University of Toronto	\$4,000
2019	Rosemary Grant Advanced Award, Society for the Study of Evolution	\$4,250
2019	GM Women in Science and Mathematics Award, University of Toronto	\$5,000
2019	Dean's International and Indigenous Initiatives Fund, University of Toronto	\$4,000
2017-2020	Postgraduate Scholarships-Doctoral Program (PGS-D), NSERC	\$63,000
2016-2017	Canada Graduate Scholarships-Masters (CGS-M), NSERC	\$17,500
2015	College of Biological Sciences Undergraduate Research Assistantship, UofGuelph	\$5,000
2014	Undergraduate Student Research Award (USRA), NSERC	\$4,500

## Awards & Recognitions

2021	Peter Abrams Prize, EEB University of Toronto.	\$1000
2021	Early Career Award, J.F. Crow Institute, UW-Madison.	\$150
2019	DeLill Nasser Award for Professional Development, Genetics Soc. Amer.	\$1000
2019	Golden Buffalo for Best Talk, Great Lakes Evolutionary Genetics Symposium	
2019	Diversity & Excellence in Doctoral Research Award, CSEE	\$1500
2019	Hamilton Award Finalist, SSE	\$500
2019	Walter M. Fitch Prize Finalist, SMBE	\$2,000
2019	Ramsay Wright Graduate Award, EEB UofToronto	\$1,000
2017	Young Investigator Travel Award, SMBE	\$2,000

## Invited Seminars

- Kreiner JM**, Stinchcombe JR, & Wright SI. 2021. The repeatability and genomic architecture of herbicide resistance evolution. Charles University, Prague. (Dept. Seminar)
- Kreiner JM**, Stinchcombe JR, & Wright SI. 2021. The repeatability and genomic architecture of herbicide resistance evolution. J.F. Crow Early Career Scientist Seminar Award Series, University of Wisconsin Madison, USA. (Award Series)
- Kreiner JM**, Stinchcombe JR, & Wright SI. 2021. Mutational origins, genomic architecture, and selective history of herbicide resistance. University of British Columbia, Biodiversity Research Institute. Vancouver, Canada. (Dept. Seminar)
- Kreiner JM**, Stinchcombe JR, & Wright SI. 2019. Population genomics of herbicide resistance and agricultural adaptation. Canadian Society for Ecology & Evolutionary Biology Annual Meeting. Fredericton, Canada. (Plenary Talk)
- Kreiner JM**, Sikkema P, Tranel P, Weigel D, Stinchcombe JR, & Wright SI. 2019. Population genomics of herbicide resistance adaptation. Ecology & Evolutionary Biology Seminar Series, Queens University. Kingston, Ontario, Canada. (Dept. Seminar)
- Kreiner JM**, Weigel D, Stinchcombe JR, & Wright SI. 2019. Demographic and genetic origins of herbicide resistance and agricultural adaptation in *Amaranthus tuberculatus*. Max Planck Institute for Developmental Biology. Tuebingen, Germany. (Dept. Seminar)
- Kreiner JM**, Sikkema P, Tranel P, Weigel D, Stinchcombe JR, & Wright SI. 2018. Deciphering the evolutionary mechanisms driving the spread of glyphosate resistant *Amaranthus tuberculatus*. Canadian Weed Science Society Annual Meeting. Niagara Falls, Ontario, Canada. ("Genomics of herbicide resistance" symposium)
- Kreiner JM**, Sikkema P, Tranel P, Weigel D, Stinchcombe JR, & Wright SI. 2018. Population genetics of the spread of glyphosate-resistant *Amaranthus tuberculatus* into Canada. University of Guelph - Ridgetown Campus, Ontario, Canada. (Dept. Seminar)
- Kreiner JM**, Stinchcombe JR, & Wright SI. 2018. Comparative population genomics of herbicide resistance: mating system, ploidy, and mechanistic patterns of adaptation. PAG XXVI, San Diego, California, USA. ("Weed science" symposium)
- Kreiner JM**, Kron P, & Husband B. 2018. The evolutionary maintenance of unreduced gametes and their role in whole genome duplication. PAG XXVI. San Diego, California, USA. ("Polyploidy" symposium)

## Selected Conference Presentations

- Kreiner JM**, Kron P, Husband BC. 2021. The frequency and maintenance of unreduced gametes & implications for polyploid formation. Polyploidy Webinar, Barker Lab. (Virtual talk)
- Kreiner JM**, Tranel PJ, Weigel D, Stinchcombe JR, & Wright SI. 2020. Heterogeneity in the history and interactions of independent target-site resistance mutations across populations. Society for Molecular Biology & Evolution Annual Meeting. Quebec, Canada. (Talk, Molecular foundations of parallel and convergent evolution) - *Cancelled due to COVID*
- Kreiner JM**, Tranel PJ, Weigel D, Stinchcombe JR, & Wright SI. 2019. Population genomic processes of convergent herbicide resistance adaptation. Society for Molecular Biology & Evolution Annual Meeting. Manchester, UK. (Talk, Walter Fitch Symposium)
- Kreiner JM**, Tranel PJ, Weigel D, Stinchcombe JR, & Wright SI. 2019. Patterns & population genomic processes of herbicide resistance and agricultural adaptation. Society for the Study of

Evolution Annual Meeting. Providence, Rhode Island, USA. (Talk, Hamilton Symposium)

**Kreiner JM**, Giacomini D, Bemm F, Waithaka B, Regalado J, Lanz C, Hildebrandt J, Sikkema PH, Tranel PJ, Weigel D, Stinchcombe JR, & Wright SI. 2019. Population genomics of herbicide resistance and agricultural adaptation in *Amaranthus tuberculatus*. Great Lakes Evolutionary Genetics Symposium. University at Buffalo, Buffalo, New York, USA. (Talk)

**Kreiner JM**, Stinchcombe JR, & Wright SI. 2018. Comparative population genomics of herbicide resistance: mating system, ploidy, and mechanistic patterns of adaptation. II Joint Congress on Evolutionary Biology. Montpellier, France. (Talk)

**Kreiner JM**, Stinchcombe JR, & Wright SI. 2018. Comparative population genomics of herbicide resistance: mating system, ploidy, and mechanistic patterns of adaptation. AGA Wild Quantitative Genetics Symposium, Toronto, Canada. (Poster)

**Kreiner JM**, Stinchcombe JR, & Wright SI. 2017. Population genomics of herbicide resistance and agricultural adaptation in *Capsella bursa-pastoris*. SBE. Austin, Texas, USA. (Poster)

**Kreiner JM**, Stinchcombe JR, & Wright SI. 2016. The evolutionary genomics of herbicide resistance in *Capsella bursa-pastoris*. The Allied Genetics Conference, Genetics Society of America. Orlando, Florida, USA. (Poster)

**Kreiner JM**, Kron P, & Husband B. 2015. The role of life history in the evolution of unreduced gametes in Brassicaceae. Ontario Ecology, Ethology, and Evolution Colloquium. York University, Toronto, Ontario, Canada. (Talk)

## Teaching Experience

### Courses Taught

2020 **Instructor** Bioinformatics for Evolutionary Biology (EEB1450)

*All the following courses taught at University of Toronto*

2020 **Teaching Assistant** Intro to Bioinformatics & Genomics (EEB1450)

2018, 2019 **Teaching Assistant & Guest Lecturer** Principals of Evolution (EEB318)

2017, 2019 **Teaching Assistant** Evolutionary Ecology (EEB324)

2015, 2017 **Teaching Assistant** Adaptation & Biodiversity (BIO120)

2016 **Teaching Assistant** From Genes to Ecosystems (BIO220)

### Mentoring Independent Research Projects

2019-2020 Paula Pietraszkiewicz - *Assaying glyphosate herbicide resistance in Amaranthus*

2019-2020 Justin To - *Agricultural adaptation of primary dormancy in Amaranthus*

2019 Amalia Caballero - *Agricultural adaptation of secondary dormancy in Amaranthus*

2018-2019 Solomiya Hnatovksa - *Characterizing transposable element evolution in Amaranthus*

2018-2019 Hayley McKay - *Gene expression and rapid agricultural adaptation in Amaranthus*

2017-2018 Sotirios Katsuras - *Dose-response to ALS herbicides in Capsella bursa-pastoris*

## Additional Research Experience

- 2019        **Student** Midwest Phylogenetics Workshop (NSF/Uof Minnesota/E. Goldberg)
- 2016        **Student** Contemporary Adaptation Workshop (Colorado SU/ Software Carpentry)
- 2013-2015   **Research Assistant** University of Guelph (B. Husband)
- 2012-2013   **Research Assistant/Field Technician** University of Guelph (A. MacDougall)
- 2012-2013   **Research Assistant/Lab Technician** University of Guelph (R. Danzmaan)

## Community Involvement

**Referee** *Proceeding of the National Academy of Sciences (3), Molecular Biology and Evolution (2), Molecular Ecology, Heredity, Ecology and Evolution, & Evolutionary Applications*

- 2018-2019   **Panelist** Mental Health Discussions, Dept. of EEB, University of Toronto
- 2018-2019   **Editor & Writer** *The EEB Quarterly*, University of Toronto
- 2018-2019   **Associate Member & Writer** F1000, Faculty of 1000
- 2018-2019   **EGSA Co-president** EEB Grad. Student Association, University of Toronto
- 2018        **Organizer** Symposium "The Evolution of Resistance", Joint SSE/ESEB, Montpellier
- 2018        **Organizer** EEB Plant Evolutionary Genetics Seminar Series, University of Toronto
- 2017        **Judge** EEB Undergraduate Thesis Poster Fair, University of Toronto
- 2017-2018   **Organizer**, Student Journal Club, University of Toronto
- 2017-2018   **Social Committee** EEB Grad. Student Association, University of Toronto
- 2017        **Organizer** Evolution Book Club, EEB Grad. Student Association, University of Toronto
- 2017        **Volunteer**, EEB Booth at Science Rendezvous, University of Toronto
- 2016,2017   **Planning Committee** Atwood Colloquium, University of Toronto
- 2016-2017   **Secretary** EEB Grad. Student Association, University of Toronto
- 2016-2017   **Peer Mentor** Dept. of EEB, University of Toronto
- 2016-2017   **Panelist** Workshop series on applying for an NSERC awards, University of Toronto
- 2016        **Organizer** Ontario Ecology, Ethology, and Evolution Colloquium, Toronto
- 2016        **Volunteer** Toronto General Hospital, University Health Network